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EXAMINER	
WATKINS III, WILLIAM P	

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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHAIKH GHALEB MOHAMMAD YASSIN ALHAMAD

Appeal 2008-0351
Application 10/758,714
Technology Center 1700

Decided: March 31, 2008

Before EDWARD C. KIMLIN, CHUNG K. PAK, and PETER F. KRATZ, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 13 through 16, and 31 through 35. Claims 17 through 30 and 36 through 38, the other claims pending in the above-identified application, stand withdrawn by the Examiner as being directed to a nonelected invention. We have jurisdiction pursuant to 35 U.S.C. § 6.

We AFFIRM.

STATEMENT OF THE CASE

The subject matter on appeal is directed to "an expandable slit metal foil which may be stretched into a three-dimensional metal net having unique properties" (Spec. 3, l. 28 to 4, l. 1). "By substituting other materials [such as cardboard or strong kraft paper] for the metal foil in producing an expandable product, it is possible to use the product in a number of different industries or applications, such as the packaging, insulation, or construction industries or as decorative items" (Spec. 41, l. 29 to 42, l. 6). To the expanded net, a mixture of melted tar and sand may be distributed or filled (Spec. 43, ll. 11-24). Further details of the appealed subject matter are recited in representative claims 13 and 31 reproduced below:

13. A construction material comprising:

a sheet of flexible material having a longitudinal dimension and discontinuous slits in spaced-apart lines parallel to each other and transverse to the longitudinal dimension;

the sheet longitudinally expanded to form cells in the sheet; and

a hardened mixture of sand and tar, coated with sand particles, disposed in each of the cells.

31. A construction material comprising:

a sheet of flexible material having a thickness of about 0.028 to 1.0 mm and discontinuous slits, separated by gaps and each having a length, in parallel lines which are spaced apart about 1 to 4 mm;

the length of each of the slits being about 1 to 2.5 cm, and the gaps each having a length of about 2 to 6 mm;

the sheet expanded to form cells in the sheet; and

a hardened mixture of sand and tar disposed in each of the cells.

The Examiner has relied upon the following references as evidence of unpatentability of the claimed subject matter:

Kinney	312,864	Feb. 24, 1885
Stock	3,825,465	Jul. 23, 1974

The Examiner has rejected claims 13 through 16 and 31 through 35 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Stock and Kinney.

The Appellant appeals from the Examiner's decision rejecting the claims on appeal under 35 U.S.C. § 103(a).

RELEVANT FACTUAL FINDINGS, PRINCIPLES OF LAW, ISSUES AND ANALYSES

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). "[A]nalysis [of whether the subject matter of a claim would have been obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of

ordinary skill in the art would employ." *KSR Int'l Co., v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-41 (2007) *quoting In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006); *see also DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361 (Fed. Cir. 2006) ("The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself."); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969) ("Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness 'from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.'"); *In re Hoeschele*, 406 F.2d 1403, 1406-407 (CCPA 1969) ("[I]t is proper to take into account not only specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom . . . .").

Here, we find that Stock teaches forming a three dimensional, open mesh structure by expanding a sheet metal, paper or cardboard having slits in a predetermined pattern and in desired spacing distance (col. 1, ll. 14-20 and col. 2, ll. 25-46). We find that Stock teaches that this structure is well known to be used in the construction industry (col. 1, ll. 46-47). We find that Stock teaches this structure may be used with an optional reinforcement member and may be filled with plastic materials, plaster or concrete to form a wall structure (col. 3, ll. 70-75 and col. 4, ll. 27-48). Although Stock at Figure 1 illustrates a metal sheet having slits that run in the longitudinal direction, it clearly teaches employing slits in any predetermined directions, inclusive of

the claimed transverse direction, as indicated supra. Moreover, as correctly found by the Examiner (Ans. 4), Kinney teaches employing a sheet metal having slits in the transverse direction to form three dimensional, open mesh structure fences or other structures (p. 1, l. 5 to p. 2., l. 3, p. 2, ll. 31-35, and Figs. 1-4). We find that Kinney teaches that the stiffness and strength for a given thickness could be affected by the arrangement of slits, e.g., the distance and direction of slits (p. 2, ll. 3-31).

Given the above teachings, we concur with the Examiner that one of ordinary skill in the art would have been led to provide a optimally thick (claimed thickness) metal sheet having slits in any predetermined pattern, including the claimed transversal directions, and spacing distance, based on the desired application and/or desired stiffness and strength of the structure involved, with a reasonable expectation of successfully forming a three dimensional, open mesh structure useful for the construction industry. *See also In re Boesch*, 617 F.2d 272, 276 (CCPA 1980)("[D]iscovery of an optimum value of a result effective variable… is ordinarily within the skill of the art."); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955)("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.") This is especially true in this case since one of ordinary skill in art interested in improving Stock's structure would have looked to the structure taught by Kinney because their structural similarities, their broad construction industry purposes and the effect of slit arrangements in a metal sheet recognized by Kinney. *See, e.g., In re Bigio*, 381 F.3d 1320, 1324-25 (Fed. Cir. 2004).

The Appellant contends that one of ordinary skill in the art would not have been led to include tar and sand in the apertures or cells in the three dimensional, open mesh structure suggested by Stock alone, or in combination with Kinney, in the claimed manner (Br. 7-14).

The dispositive question is, therefore, whether one of ordinary skill in the art would have been led to include tar and sand in the apertures or cells in the three dimensional, open mesh structure suggested by Stock alone, or in combination with Kinney in the claimed manner. On this record, we answer this question in the affirmative.

As correctly determined by the Examiner (Ans. 6):

> The claim language only requires the tar and sand filler to be "disposed" in the cells. It does not require that the cells be entirely filled with only the tar and send composition. The instant claim language also does not exclude the presence of reinforcing members in the cells.

The Examiner also correctly finds at page 8 of the Answer that Stock teaches coating both the inside and outside of the apertures or cells of its three dimensional, open mesh structure with tar to impart a stiffness and filling the resulting apertures or cells with concrete (col. 2, ll. 25-40 and col. 27 and 27-35). The Appellant does not challenge the Examiner's finding (official notice) that the concrete is well known to contain sand. *Compare* Ans. 8, with Br. 7-26. Thus, we concur with the Examiner that one of ordinary skill in the art would have included at least some amounts of tar and sand in the cells or apertures of the three dimensional, open mesh structure suggested by Stock and Kinney.

Even were we to interpret the claims as requiring the filling of the cells or apertures of the claimed three dimensional, open mesh structures in their entirety with tar and sand, our conclusion would not be changed. We find that Stock teaches a reinforcement member as an optional item; it need not be placed in the cells or apertures of its three dimensional, open mesh structure. Specifically, we find that Stock teaches (col. 3, ll. 70-74):

> If desired, a reinforcement member can be placed in each of the apertures, i.e., in each of the cells defined by the superimposed array of apertures, or some of such cells can be void of any reinforcement members.

We find that Stock teaches filling these apertures or cells with concrete as indicated *supra*. We note that the Appellant does not challenge the Examiner's finding that "[a]sphalt, which comprises sand or other aggregate in a tar or bitumen binder, is a well-known substitute for concrete in building and road fabrication. Thus, we are constrained to agree with the Examiner that one of ordinary skill in the art would have been led to fill at least some or all apertures or cells of the three dimensional, open mesh structure suggested by Stock and Kinney with asphalt (sand and tar) or concrete (sand and inorganic cement binder) with a reasonable expectation of successfully forming a structure useful for the building construction purposes.

In view of the forgoing, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of 35 U.S.C. § 103(a).

ORDER

The decision of the Examiner is affirmed.

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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